RECENT LABOUR MARKET DEVELOPMENTS IN BRITISH C[illegible]MBIA: PART I: AGGREGATE LABOUR MARKET BEHAVIOR

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RECENT LABOUR MARKET DEVELOPMENTS IN BRITISH COLUMBIA

The purpose of this paper is to describe the most significant labour market developments in British Columbia during the past decade and to assess the implications of these developments. The emphasis is on the process of labour market adjustment during this turbulent period, with particular focus on the issue of structural unemployment.

Although there were a number of important developments during this period, the most significant was the severe recession of 1982-83 and the subsequent recovery from that recession. In addition to the consequences of the recession, the B.C. labour market was also affected by several longer term structural changes. It is often useful to distinguish between long term structural changes -- which are largely continuing and cumulative in nature -- and short term cyclical developments -- which are largely temporary and transitory in nature. This is particularly the case in designing labour market policies, which are usually intended to deal with problems of a continuing nature. Thus we attempt in this paper to distinguish between underlying trends and cyclical deviations from these trends. Nonetheless, it should be recognized that cyclical fluctuations, especially large ones, can have effects which persist for several years -- thus blurring the distinction between long term structural developments and short term cyclical changes.

In any examination of developments which are claimed to be significant, some basis of comparison is needed. Often this basis is past behavior. Other regions also frequently provide an appropriate reference point. In this paper the main comparisons are with the past (usually with the period

from the mid 1960s to 1980) and with Canada as a whole. The latter indicates the extent to which the British Columbia experience differed from the average Canadian behavior. Comparisons to specific provinces are included in a few instances when these are judged to add to the understanding of developments in British Columbia.

The paper is organized as follows. The next section describes the aggregate behavior of B.C.'s labour market during the 1980s and compares this behavior to that experienced during the 1966-80 period and that experienced in Canada as a whole. The focus is on both long run trends in aggregate outcomes and on the impacts of the 1982-83 recession. This discussion of aggregate behavior sets the stage for a more detailed examination of the higher unemployment levels experienced during the 1980s and in particular the question of whether these higher unemployment rates are largely a cyclical or structural phenomenon. That concludes Part I of the paper. Part II takes a more detailed look at the unemployed -- by region within B.C., by age and sex and by such characteristics as level of education.

Aggregate Labour Market Behavior

Tables 1 and 2 present a variety of aggregate labour market indicators for B.C. and Canada over the period 1966-90. The first and fifth columns of Table 1 contain the populations of working force age (source population) and the corresponding columns of Table 2 give the year-to-year source population growth rates. Source population growth in B.C. has generally exceeded that for Canada as a whole, reflecting the fact that B.C. has generally received more than its share of immigration and inter-provincial migration. The high rates of source population growth during the 1960s and 1970s were mainly associated with the coming of working force age

of the 'baby boom' generation. By 1980 the process of the baby boom generation working its way into the working age population and labour force was complete. For Canada as a whole, source population growth rates have been declining since 1974 (Table 2) and the number of youths (15 to 24 year olds) in the labour force has been falling in absolute terms since 1980. In the case of B.C., the negative effects on source population growth of smaller entering cohorts have been offset by the positive impacts of immigration and net inter-provincial migration -- especially in 1979-81. Nonetheless, during most of the 1980s both B.C and Canada experienced much lower rates of source population growth than in the previous two decades.

The proportion of the source population participating in British Columbia's labour force has generally been very similar to that for Canada as a whole. As discussed in more detail subsequently, the rise in aggregate labour force participation reflects two offsetting trends -- the gradual decline in male participation and the dramatic growth in participation of females. The 1982-83 recession reduced the growth in participation in B.C. somewhat more than in Canada as a whole. Nonetheless, by 1990 the overall labour force participation rates in the two regions were again very similar.

During the 1960s and 1970s, Canada's rates of labour force and employment growth were the most rapid of the OECD countries (OECD, 1984). On the supply side of the labour market, these trends reflected both rapid source population growth and a rising fraction of that population participating in the labour force. As Table 2 indicates, British Columbia's experience in this regard was even more dramatic -- with labour force growth averaging 4.4 percent per year during 1966-81 (versus 3.1% for Canada) and employment growth averaging 4.2 percent per year (vs. 2.8% for Canada).

However, since 1982 both labour force and employment growth have slowed considerably. An important contributing factor has been the slower growth in the population of working force age. In addition, the 1982-83 recession reduced the upward trend in labour force participation. The impact of the recession is most evident on employment growth, which declined in B.C. by 5.4% in 1982 (3.5% in Canada) and a further 1.0% in 1983 (vs. growth of 0.5% in Canada).

The more severe impact of the recession on the B.C. labour market -- suggested by the data on aggregate labour force participation and employment -- is also evident in the behavior of the employment-population ratios and unemployment rates. In both B.C. and Canada, the employment-population ratio displayed an upward trend over the 1966-81 period, with short term departures from that trend during recessions and periods of slow growth (e.g. 1970-71 and 1975-76). British Columbia's employment-population rate -- which exceeded slightly that of Canada in 1981 -- fell more dramatically during the recession and remains below that of Canada as a whole, despite having returned to its pre-recession level.

Similarly, the unemployment rate in B.C. -- which in 1980-81 was lower than that for Canada as a whole -- rose much more during the recession and has declined less as the economy recovered. Consequently, as the national economy reached the peak of the business cycle in 1989-90, the unemployment rate in Canada had returned to approximately its pre-recession level whereas that in B.C. remained substantially above that level.

These trends are illustrated in Figures 1 to 3. Figure 1 shows the fraction of the population not working or non-employment rate (one minus the employment to population ratio) for B.C. and Canada over the 1966-90 period. The non-employment rate showed a similar downward trend in both B.C.

and Canada until 1981, rose substantially during the recession (much more so in B.C.), and subsequently declined to approximately the pre-recession level (albeit B.C.'s non-employment rate remains above that of Canada). The non-employment gap (B.C. minus Canada) is shown in Figure 3. The behavior of unemployment over this period is shown in Figure 2, and the unemployment rate gap in Figure 3.

These two measures of unutilized labour resources -- the conventional unemployment rate and the non-employment rate -- displayed very similar cyclical patterns during the recession and recovery of the 1980s, both in B.C. and Canada. The relative behavior (B.C. versus Canada as a whole) was also very similar (Figure 3). However, the long run trends of the two measures are very different, with the unemployment rate displaying an upward trend since the mid 1960s and the non-employment rate trending downward.[1] Which of the two measures is preferred depends on one's view of the difference between unemployment and non-participation. If, as has been suggested for example to be the case for many youths, the distinction between unemployment and non-participation is purely terminological, then the non-employment rate is relevant. If, on the other hand, unemployment is a distinctly different labour market state, with a stronger attachment to the labour force, then the unemployment rate is relevant.

These data indicate that the B.C. labour market was more severely affected by the 1982-83 recession than was the case for Canada as a whole. It is important to ask whether this difference was associated with a more substantial decline in output in B.C. or whether it reflected a larger response to a similar decline in economic activity. This issue is examined in Table 3 and Figure 4 using recently available data on real output by province.[2]

As Table 3 indicates, B.C.'s economy grew at a faster rate than Canada's during the period prior to the recession (1970-81). Trend real output growth per year was 5.9% in B.C. versus 4.8% in Canada. This is also evident in Figure 4 which for ease of comparison shows real output in B.C. and Canada relative to their respective 1981 levels. The decline in output during 1981-82 was significantly larger in B.C. (-8.6% versus -3.9% for Canada). The contrast is even more stark when measured relative to their prior trend growth rates (-14.5% versus -8.7%). Furthermore, as Figure 4 indicates, the recovery began much later in B.C.; output growth in B.C. was essentially zero in 1982 and 1983 whereas the Canadian economy grew in real terms in both years. Subsequently, however, B.C.'s economy appears to have returned to its high growth path with real output growth in 1986-89 exceeding that of Canada. Nonetheless, in 1989 real output in B.C. remained below that of Canada (relative to 1981 levels).

Several conclusions emerge from this examination of the aggregate behavior of the B.C. and Canadian labour markets:

1. British Columbia's growth in the population of working force age and in the labour force has been extremely rapid by international standards and significantly higher than that of Canada as a whole. The latter largely reflects the fact that B.C. generally receives more than its share of immigration and inter-provincial migration.

2. During the past two to three decades the B.C. economy has generally grown at a more rapid rate than the rest of Canada, both in terms of output and employment.

3. Trends in labour force participation and employment-population ratios in B.C. and Canada are very similar.

4. In both B.C. and Canada, the growth of the source population and the labour force slowed considerably in the 1980s compared to the previous two decades, largely reflecting the end of the coming of working force age of the baby boom generation.

5. The B.C. economy and labour market were much more severely affected by the 1982-83 recession. Output and employment declined much more in B.C., especially relative to trend, and unutilized labour resources -- measured either by the unemployment rate or the non-employment rate --increased more. Recovery from the recession also started later in B.C. than in Canada as a whole. However, economic activity in B.C. subsequently recovered substantially so that by 1990 most aggregate labour market indicators (e.g. unemployment rate, non-employment rate, labour force participation rate) had returned to approximately their pre-recession levels (relative to Canada as a whole).

6. In both B.C. and Canada, unemployment has trended upward since the 1960s and was significantly higher in the 1980s than in previous decades. However, the fraction of the population not employed has trended downward in B.C. and Canada.

Behind these aggregate trends and developments lies considerable change in the industrial, occupational and demographic structure of the labour force. These changes -- many of which are continuing in nature -- are examined later in the paper. The next section focuses on what is probably the most worrisome of the aggregate developments described above -- the rise in unemployment during the 1980s.

The Rise in Unemployment

During the 1980s the average unemployment rate was much higher than in the previous two decades. Some of the aggregate evidence examined above suggests that this may be primarily a temporary or cyclical phenomenon associated with the deep recession of 1982-83. By the peak of the business cycle in 1989-90, the Canadian unemployment rate had returned to its level in the previous cyclical peak year (1981). Real output growth had resumed its previous trend rate (Fig. 4). However, considerable concern has been expressed that the higher unemployment rates in the 1980s reflect in part a continuing or structural phenomenon. From a policy perspective this is an important question because an increase in structural unemployment might suggest the need for additional labour market policies.[3] The purpose of this section is to examine the evidence relating to the hypothesis that structural unemployment worsened in the 1980s.

This important issue can be thought of as having two components. First, has there been an increase in structural unemployment in Canada as a whole, and has B.C.'s experience in this regard been similar to that of Canada? If this were the case, the labour market performance of both B.C. and Canada would have deteriorated relative to their respective past behavior, but there would not be any change in B.C.'s performance relative to the rest of Canada. The second possibility is that there was an increase in structural unemployment in B.C. but not in Canada as a whole. In this case B.C.'s performance would have deteriorated relative to its own past but this would not be the case for Canada.

This distinction may be useful in identifying the causes of any change in structural unemployment as well as the types of remedies that may be appropriate. If there has been an increase in structural unemployment in B.C. relative to the

rest of Canada, this would suggest explanations and probably also policies that are specific to the B.C. labour market. If, on the other hand, a general increase in structural unemployment in Canada has occurred then the causes are also likely to be general or pervasive ones and the appropriate policies may also be national in scope.

The aggregate labour market behavior examined above suggests that there is little evidence that B.C.'s labour market deteriorated (other than temporarily) relative to that of Canada as a whole. The large B.C. - Canada unemployment gap which emerged beginning in 1982 had disappeared by 1990; the non-employment gap has also largely disappeared (Figure 3).[4] Inspection of Figure 4 suggests that the differences remaining in 1989-90 between B.C. and Canada in such key aggregate indicators as the unemployment rate, employment-population ratio and participation rate could probably be attributed to the slower recovery in economic activity and the fact that B.C.'s real output remains below Canada's (relative to their respective 1981 levels). Although a more detailed investigation may prove otherwise, it appears likely from these aggregate statistics that there will be little support for the hypothesis that there was an increase in structural unemployment in B.C. but not in Canada as a whole. It is to that more detailed investigation that we now turn.

Unemployment and Job Vacancies

Economists distinguish between cyclical (or deficient demand) unemployment and non-cyclical unemployment (frictional plus structural) not because they -- like `The Count' in the program Sesame Street who delights in counting objects -- enjoy categorizing various phenomena, but because cyclical and non-cyclical unemployment differ in their causes, their consequences, and in the policies that are

likely to be effective in dealing with them. In particular, cyclical unemployment is associated with a general shortage of jobs and its remedy lies in stimulating (or waiting for private market responses to stimulate) economic activity. Structural unemployment, on the other hand, occurs when there is a mismatch between the skills or location of the unemployed and the characteristics of the available jobs. The types of policies that are likely to be effective are those which alter the location or skill composition of either the unfilled job vacancies or the available labour supply. Misreading the situation can be costly. If unemployment is largely structural in nature, expansionary policies may simply increase inflationary pressures and have little impact on unemployment. On the other hand, training, retraining or relocating workers (or relocating jobs) will be of little benefit if the problem is a general shortage of employment opportunities.

One tool that is often used to distinguish between cyclical and non-cyclical unemployment is the unemployment - job vacancies relationship, or Beveridge curve. The Beveridge curve (also called here the U-V relationship) results in part from the fact that unemployment and job vacancies will always co-exist in a dynamic labour market. To some extent this co-existence of unfilled employment opportunities and unemployed workers results from normal turnover and adjustment to change in the labour market. Each period, new jobs open up in some enterprises and end in others; similarly, new individuals enter the labour force to search for work while others leave the labour force to go to school, work in the home or retire. This process of matching workers and jobs takes time. As a consequence, a certain amount of frictional unemployment is both inevitable and desirable in a dynamic economy. Associated with this frictional unemployment will be unfilled job vacancies -- not because the skills and locations of jobs and workers do not

match, but because the matching process takes time and a new set of matches needs to be made each period.

In addition to this frictional unemployment associated with normal turnover in the labour market, job vacancies and unemployment will also co-exist due to structural unemployment. In this case more than time is required to match the available labour supply to that demanded by employers -- either the location or skill composition of the workers or jobs must adjust. The sum of frictional plus structural unemployment determines the amount of unemployment that exists in the economy in the absence of cyclical fluctuations.

During a business cycle, a negative relationship between the unemployment rate and the job vacancy rate is traced out. In expansions the number of unfilled vacancies rises and of unemployed workers falls. The opposite occurs in downturns. These responses to the ups and downs of economic activity result in the Beveridge curve.

An increase in frictional or structural unemployment will result in a higher unemployment rate <u>at any level of job vacancies</u>; i.e., a shift up and to the right of the U-V relationship. Thus cyclical changes result in movements up and down a given U-V curve, while changes in frictional or structural unemployment result in shifts in the curve. A common methodology for distinguishing between cyclical and non-cyclical unemployment therefore involves determining whether a given increase in unemployment is associated with a movement along the U-V relationship or with a shift in the relationship. This is the methodology employed in this section, albeit informally, to determine whether structural unemployment increased in B.C. and Canada in the 1980s.

At present there is no ongoing survey of job vacancies in Canada. The best available measure is the Help Wanted Index (HWI), an index of the volume of classified newspaper advertisements for help wanted. The original HWI is available over the period 1966-88; improvements to the index were made recently and the new index is available from 1981.[5]

Figure 5 shows the time series behavior of the original HWI for B.C., Ontario and Canada over the 1966-88 period; the comparable unemployment rates are shown in Figure 6. Classified ads grew more rapidly in B.C. than elsewhere during the 1960s and 1970s, declined more than elsewhere during the 1982-83 recession, and recovered more slowly than in Ontario and Canada following the recession.[6] B.C.'s higher trend rate of growth in job vacancies during the 1966-81 period is consistent with the more rapid growth in output and employment described earlier. Similarly, the steeper decline in job vacancies fits with the evidence that the 1982-83 downturn was more severe in B.C. than elsewhere.

Figures 7,8 and 9 plot the Beveridge curves for B.C., Ontario and Canada respectively over the 1966-88 period. Each of the regions is characterized by outward-shifting combinations of unemployment and job vacancies during the 1960s and 1970s. The cumulative magnitude of these shifts is substantial. This suggests that most of the upward trend in unemployment during the 1966-80 period is due to an increase in frictional and/or structural unemployment. During the 1980s the main movements were along the U-V relationships, with only modest evidence of further outward shifts. Ontario shows the least evidence of an outward shift during the 1980s, followed by B.C. and Canada. This suggests that most of the higher unemployment in the 1980s was cyclical in nature. There is some indication that structural or frictional unemployment also increased in the 1980s, especially in Canada but also in B.C. However, this outward

shift in the U-V relation was modest compared to the shifts that occurred in the previous two decades.

In order to provide more insight into the relative performance of the B.C. labour market, the next two charts show Beveridge curves for B.C. versus Ontario (Figure 10) and B.C. versus Canada (Figure 11). In order to compare two jurisdictions in one diagram, we plot the difference in unemployment rates against the difference in job vacancy rates. During the 1960s and 1970s there was little change in B.C.'s Beveridge curve relative to that of Ontario or Canada as a whole. The U-V curves were shifting out in all three cases, but to similar degrees so that there was little relative change. However, during the 1980s substantial relative changes occurred. With the onset of the 1982-83 downturn, B.C.'s unemployment gaps (B.C. vs. Ontario and vs. Canada) increased relative to the respective HWI gaps. Subsequently, from 1984-88 the unemployment gaps remained high (e.g. a difference in unemployment rates of 5 to 6 percentage points between B.C. and Ontario) while the gap in job vacancies grew increasingly larger. This is simply another way of illustrating the developments shown in Figures 5 and 6; while unemployment fell at similar rates in B.C., Ontario and Canada during the 1984-88 period, job vacancies grew most rapidly in Ontario and most slowly in B.C.

The behavior of the U-V relation for B.C. using the new HWI is shown in Figure 12. As before, the cyclical changes stand out most clearly. However, there is also an indication of an outward shift in the U-V relation. The magnitude of this shift appears larger than that indicated by the original HWI (Figure 7); however, the time series is too short too draw a more definite conclusion.[7]

The final piece of evidence is shown in Figure 13 which plots the B.C. metropolitan unemployment rate (Vancouver and Victoria) against the HWI. This is of interest for two reasons. First, the HWI is constructed using newspapers from major metropolitan centres -- Vancouver and Victoria in the case of B.C. If, as seems likely, most of the classified ads in these newspapers represent jobs available in those two cities, then the appropriate comparison is to the metropolitan unemployment rate rather than the provincial rate. In addition, the relationship between unemployment in these two metropolitan areas and that in the rest of the province may have shifted during the 1980s -- so that a different conclusion could be reached if the provincial rather than metro unemployment rate were used.

Comparison of Figures 12 and 13 indicates that the basic pattern is the same in each case, but that the outward shift (if any -- see footnote 7) is somewhat larger when the metro unemployment rate is used than when the provincial unemployment rate is used. Again, the short time series makes it difficult to reach firmer conclusions; however, this last piece of evidence adds further support to the view that some increase in frictional or structural unemployment occurred in B.C. during the 1980s.

Several conclusions emerge from this examination of the behavior of unemployment and job vacancies in British Columbia, Ontario and Canada:

1. Substantial outward shifts in the three Beveridge curves occurred during the 1960s and 1970s, indicating that all three regions began the 1980s with historically high levels of frictional and structural unemployment.

2. Most of the higher unemployment experienced during the 1980s appears to be cyclical in nature, associated with the

deep recession of 1982-83 and the recovery from that recession.

3. Some further outward shifts in the U-V relationships may have occurred during the 1980s, suggesting that non-cyclical unemployment may also have increased during this decade. The evidence of such shifts is strongest for B.C. and Canada and weakest for Ontario.

In order to examine these issues further, we turn next to evidence on the incidence and duration of unemployment.

Incidence and Duration of Unemployment

Although the distinction between frictional and structural unemployment is reasonably clear conceptually, it is in practice difficult to delineate the two. Even if it were possible to agree on criteria for doing so, the available data usually would not permit one to determine whether a particular worker is frictionally or structurally unemployed. The most useful available indicator is the duration of unemployment.

The rationale behind this criterion is straightforward. Frictional unemployment is associated with normal turnover in the labour market and the concomitant process of matching workers and jobs. Except in unusual circumstances -- and assuming no cyclical unemployment, so the number of unfilled job vacancies and unemployed workers are approximately equal -- the duration of this matching process is expected to be reasonably brief, especially since by definition the available jobs and searching workers are similar in skills and location. Structural unemployment, on the other hand, requires either training, retraining, and/or relocation of workers or changes in the skill requirements and/or location

of jobs. Such adjustments take time, both to recognize that adjustment is needed and to carry out the change.

For these reasons, structural unemployment is, as a practical matter, often equated with unemployment that is long term in nature. It is recognized that there is no magical dividing line and that any attempt to separate frictional from structural unemployment using a specific duration (e.g. 4 months) is necessarily arbitrary. Nonetheless, evidence that there had been an increase in the proportion of unemployment that is long term in nature or an increase in the average duration of unemployment would, if other factors were unchanged, indicate an increase in structural unemployment.

The average duration of unemployment and the proportion of unemployment that is long term in nature (whatever the definition of 'long term') vary with the business cycle. In particular, individuals who become unemployed take longer to find a job in recessions and vice versa in booms. Thus any attempt to distinguish between frictional and structural unemployment on the basis of the duration of unemployment must take into account the state of the business cycle. This can be done, for example, by comparing two points in time that were at similar stages in the cycle.

A number of complexities arise in measuring the duration of unemployment. Most of these lie outside the scope of this paper. However, one distinction -- that between the duration of incomplete and completed spells of unemployment -- is of fundamental importance. The duration of a completed spell of unemployment is the total time from the beginning to the end of a bout of unemployment. The unemployment spell could begin by the individual losing or leaving a job or by entering or re-entering the labour force to search for work. It could end by the individual taking a job or exiting from

the labour force. In most cases the duration of a completed spell of unemployment is the measure of policy interest. However, what is typically observed is the duration of an incomplete spell; i.e., how long the individual had been unemployed at the time the survey was taken. The distinction is similar to that between life span and age, the latter corresponding to the life span up to the present point in time.

It might seem likely that the average duration of incomplete spells of unemployment will understate the average duration of completed spells. Indeed, if the spells were randomly distributed through time the average duration of incomplete spells would be about one-half that of complete spells, just as the average age of the population would be half the average lifespan if the population were evenly distributed by age. However, the regular surveys (e.g. the monthly Labour Force Survey) which we rely on to measure unemployment and its duration are also affected by a bias which works in the opposite direction. In particular, spells of unemployment which begin and end between successive survey dates are missed entirely. A monthly survey thus misses many short spells of unemployment, and as a consequence the observed average duration of incomplete spells tends to understate the true average duration of completed spells.

For these reasons the measure of the duration of unemployment that is generally available -- the duration of spells currently in progress -- may either under- or over-state the (generally unobserved) duration of completed spells. Evidence from longitudinal data (which allows one to date the beginning and end of bouts of unemployment) indicates that missing short spells is the more important of the two biases. Thus the average duration of spells in progress usually overestimates the true average duration of completed spells.

The incidence of unemployment (which refers to the proportion of the population which suffers a spell of unemployment) and the duration of unemployment are intimately related. This relation can be illustrated with a simple example. Suppose that during a particular period (e.g. one year) the unemployment rate was 8 percent. This could have come about from 8 percent of the population being unemployed all year, from all of the population being unemployed 8 percent of the year, or from many combinations in between these two extremes (e.g. 50 percent of the population being unemployed 16 percent of the year). Clearly the policy implications of these scenarios are very different. The first case corresponds to an incidence of unemployment of 8% and average duration of 52 weeks; if there were sufficient job vacancies this unemployment would be regarded as structural in nature. The second case corresponds to an incidence of 100% and an average duration of 4.16 weeks; if there were sufficient job vacancies this unemployment would be regarded as frictional in nature.

In general, the unemployment rate is the product of the average duration of completed spells of unemployment and the incidence of unemployment.[8] Although it is not possible to determine from observed data on the incidence and duration of unemployment the amount of unemployment that is structural or frictional in nature, a change which results in a lower incidence and higher duration (at a given unemployment rate) implies an increase in structural and decrease in frictional unemployment.

The recent behavior of the incidence and duration of unemployment is shown in Table 4. The regular monthly Labour Force Survey provides information on the average duration of unemployment spells in progress at the time of the survey. The fraction of the population who experience unemployment is

calculated using the approximation that the unemployment rate is the product of incidence and duration.[9]

The average duration of spells in progress was generally in the 11 to 14 weeks range in British Columbia prior to 1981 and somewhat higher in Canada. (Average over the 1977-81 period was 13.2 weeks in B.C. and 14.9 weeks in Canada.) However, the proportion of the population who experienced unemployment was higher in B.C. (30.0 percent over the 1977-81 period versus 27.2 percent for Canada).

With the onset of the 1982-83 downturn, both the incidence and duration of unemployment increased. In B.C., duration peaked at 25.3 weeks in 1985 and has subsequently declined steadily. Nonetheless, in 1990 the average duration remained significantly higher than at the peak of the previous business cycle in 1981 (17.2 weeks vs. 11.2 weeks). The implication is that at similar stages in the business cycle the duration of unemployment is now higher and the incidence lower. A similar, but much less pronounced, phenomenon has been observed in Canada as a whole: average duration was 17.3 weeks in 1990 vs. 15.2 weeks in 1981; incidence was 23.7 percent in 1990 vs. 25.7 in 1981.

These developments are illustrated in Figures 14 and 15. In 1990, B.C.'s average duration remained more than 50% above its pre-recession 1981 level while the incidence of unemployment had declined to less than 80% of that level. In Canada, duration remained in 1990 14% above its pre-recession 1981 level while incidence had fallen to 92% of that level. Thus during the 1980s unemployment became more concentrated among a smaller subset of the population and those who became unemployed remained so for a longer time. These findings suggest that structural unemployment worsened somewhat in Canada and considerably in B.C.

As previously discussed, the duration measure that is most meaningful for policy purposes is the completed spell length. This is also the appropriate measure for calculating the incidence of unemployment. As a check on the conclusions reached using the incomplete spell duration measure, we have estimated the average duration using unpublished gross flows data.[10] This analysis is summarized in Figures 16 and 17.

The basic pattern is similar to that observed using the incomplete spell measures. Both incidence and duration rose sharply beginning in 1982 and each has declined as the economy recovered. However, the proportion of the labour force experiencing unemployment declined to its pre-recession level (or below that level) while the duration of unemployment remained significantly above that level.

For Canada as a whole, comparison of 1981 and 1989 (the most recent year available with gross flows data) provides a good illustration of the decomposition of the unemployment rate into its incidence and duration components. Canada's unemployment rate was the same in both years (7.5%); however, incidence in 1989 was 92 percent of its 1981 level while duration was 109 percent of its 1981 level. This shows how a given unemployment rate can be associated with different combinations of incidence and duration.

B.C.'s unemployment rate was 36 percent higher in 1989 than in 1981 (9.1% versus 6.7%). This higher unemployment rate was due almost entirely to increased duration of unemployment; incidence in 1989 was 2% higher than in 1981 while duration was 33% higher.

The discussion thus far has focussed on the <u>average</u> duration of unemployment spells. Another useful indicator is the proportion of spells that are long term in nature. As noted previously, any dividing line between short term and

long term unemployment is necessarily arbitrary. We should therefore be careful to look at more than one such measure. The two most common definitions of long term unemployment are spells lasting more than six months and spells lasting more than one year. Figures 18 and 19 show the relationship between the long term unemployment rate and the total unemployment rate using these two definitions of long term unemployment.

Over a business cycle, the relation between the long term unemployment rate and the total unemployment rate will usually trace out a counter-clockwise loop (OECD, 1987, chapter 7). This is evident in the B.C. experience in Figures 18 and 19. In the recession phase, flows into unemployment exceed outflows and the unemployment rate rises; however, because the inflows only recently became unemployed the long term unemployment rate rises less than the total unemployment rate. In subsequent years, as many of those who became unemployed early in the recession enter into the long term unemployed category, the long term rate rises more rapidly than the overall rate. During the recovery phase, the relative behavior of the long term and overall unemployment rates depends on whether the long term unemployed exit unemployment at an above average or below average rate. If the long term unemployment rate does not return to its previous level (for a given overall unemployment rate), the long term unemployed are exiting unemployment at a below average rate, suggesting a worsening structural unemployment problem.

Both Figures 18 and 19 show that, although long term unemployment increased dramatically between 1981 and 1984, the long term unemployment rate had by 1990 returned to a level approximately equal to that prevailing prior to the recession. This indicates that most of the increase in long term unemployment during the 1980s was cyclical in nature.

Indeed, there is no evidence of a permanent increase in the long term rate relative to the overall unemployment rate. This finding suggests that the observed increase in the average duration is probably due to a general shift in the distribution (by length) of unemployment spells rather than due to an increase in the proportion of spells that are long term in nature.

The conclusions reached in this section can be briefly summarized:

1. Long term unemployment increased substantially during the 1980s recession; however, as the economy recovered the long term unemployment rate returned to approximately its pre-recession level relative to the overall unemployment rate.

2. As the economy recovered from the recession of the early 1980s, unemployment became more concentrated on a smaller subset of the population compared to the pre-recession levels of the late 1970s and early 1980s. On average. those individuals who became unemployed remained unemployed longer. These developments are consistent with the view that structural unemployment increased during the 1980s.

3. The tendency for unemployment to be associated with longer durations and lower incidence was more pronounced in B.C. than in Canada as a whole.

Summary and Conclusions

This part of the paper has examined the aggregate behavior of the British Columbia labour market during the 1980s and compared it to its own past behavior as well as to that of Canada as a whole during the period since the mid

1960s. We have also examined the rise in unemployment in B.C. and Canada during the 1980s. Of particular interest was the question of whether these higher unemployment levels reflected mainly a temporary cyclical phenomenon or a more permanent structural phenomenon. Conclusions have been listed at the end of each section; thus, our summary here can be brief.

The various pieces of evidence which we have examined lead to broadly similar conclusions. It is clear that the rise and fall of unemployment during the 1980s was primarily a cyclical phenomenon. The higher average unemployment rate during this decade can be attributed mainly to the fact that the 1982-83 recession was much more severe than the downturns of the previous two decades. Similarly, B.C.'s relatively high average unemployment rate can be attributed to the fact that (as shown above) the recession was much more severe in B.C. than in Canada as a whole.

Nonetheless, the evidence also indicates that there was more to the 1980s than the onset of and recovery from a sharp cyclical downturn. Both the analysis of the unemployment-job vacancies relationship and of the incidence and duration of unemployment suggest an increase in structural unemployment. In order to understand this phenomenon more fully, we next turn to a more detailed look at the characteristics of the unemployed in British Columbia.

Footnotes

1. The downward trend in the non-employment rate is the result of two off-setting factors -- the rise in labour force participation and the rise in the unemployment rate.

2. See "Final Domestic Demand at Constant Prices" and Appendices I and II in Statistics Canada, Provincial Economic Accounts, Annual Estimates 1984-88, march 1990, pp. 117-146

3. Of course, if severe recessions are now expected to be more common than in the past then existing policies to deal with cyclical unemployment may also need to be altered.

4. It is true that B.C.'s unemployment rate in 1990 (8.0%) remains significantly higher than that experienced in the previous cyclical peak year, 1981 (6.7%). However, inspection of Figure 3 indicates that the B.C. - Canada unemployment gap in 1990 was below its long run average value over the 1966-90 period.

5. See Haggar-Guenette (1989) for a brief history of the HWI and some analysis of its cyclical properties.

6. Because each of the three series is an index, comparison of levels is not meaningful. Comparisons of rates of increase prior to and subsequent to 1981 are facilitated by using 1981 as the base year for all these indexes.

7. There is also evidence in the empirical literature on the Beveridge curve that in the absence of any changes in frictional or structural unemployment, cyclical fluctuations trace out loops around a fixed U-V relation. Thus what might appear to be a shift from the 1981-82 curve to that governing 1984-89 may in fact be mainly a loop around a fixed U-V relation.

8. This relationship is exact in a 'steady state' when the inflows into unemployment and the outflows from unemployment are equal. The relation is only approximate in recessions (when the inflows into unemployment exceed the outflows) and expansions (when the outflows exceed the inflows).

9. This is only an approximation for two reasons: (1) the labour market is not always in a steady state (see footnote 8 above) and (2) the appropriate duration measure for this calculation is the duration of completed spells whereas the available measure is that for spells in progress. In addition, the incidence of unemployment will be overstated if some individuals experience multiple spells of unemployment during the year.

10. The details of this procedure are available on request. It is important to note that gross flows data are subject to substantial classification errors (which is why they are unpublished); thus these estimates of duration should be treated with caution.

References

Harrar-Guenette, C. "Job Ads: A Leading Indicator?" Perspectives on Labour and Income 1 (Autumn, 1989) 53-63.

Organization for Economic Cooperation and Development. Historical Statistics 1960-82 Paris: OECD, 1984.

Organization for Economic Cooperation and Development. Employment Outlook. Paris: OECD, 1987.

Table One

Source Population, Labour Force Participation, Employment Population Ratios and Unemployment Rate: B.C. and Canada

	British Columbia				Canada			
Year	Source Pop	LFPR	Emp/ Pop	Unem Rate	Source Pop	LFPR	Emp/ Pop	Unem Rate
1966	1263	56.7	54.1	4.6	13083	57.3	55.4	3.4
1967	1320	57.5	54.6	5.1	13444	57.6	55.4	3.8
1968	1371	57.6	54.2	5.9	13805	57.6	55.0	4.5
1969	1425	58.2	55.3	5.0	14162	57.9	55.3	4.4
1970	1486	58.7	54.2	7.7	14528	57.8	54.5	5.7
1971	1541	58.3	54.1	7.2	14872	58.1	54.5	6.2
1972	1595	58.8	54.2	7.8	15186	58.6	54.9	6.2
1973	1656	59.6	55.6	6.7	15526	59.7	56.4	5.5
1974	1724	60.3	56.6	6.2	15924	60.5	57.3	5.3
1975	1781	61.1	55.9	8.5	16323	61.1	56.9	6.9
1976	1822	61.3	56.0	8.6	16701	61.1	56.7	7.1
1977	1862	61.7	56.4	8.5	17051	61.6	56.6	8.1
1978	1909	63.0	57.8	8.3	17377	62.7	57.5	8.3
1979	1960	63.2	58.4	7.7	17702	63.4	58.7	7.4
1980	2028	64.1	59.8	6.8	18053	64.1	59.3	7.5
1981	2091	65.1	60.7	6.7	18368	64.8	59.9	7.5
1982	2126	64.3	56.5	12.1	18608	64.1	57.1	11.0
1983	2150	64.2	55.4	13.8	18805	64.4	56.8	11.8
1984	2178	64.1	54.7	14.7	18996	64.8	57.5	11.2
1985	2201	64.5	55.4	14.1	19190	65.3	58.5	10.5
1986	2224	65.2	57.1	12.5	19397	65.7	59.4	9.5
1987	2258	65.6	57.8	11.9	19642	66.2	60.4	8.8
1988	2306	65.7	58.9	10.3	19890	66.7	61.6	7.8
1989	2364	66.8	60.7	9.1	20141	67.0	62.0	7.5
1990	2425	66.0	60.6	8.3	20430	67.0	61.5	8.1

Notes: Source Pop represents population 15 years of age and over. LFPR represents the labour force participation rate among the source population. Emp/Pop represents the employment-population ratio. Unem Rate represents the unemployment rate.

Sources: Statistics Canada The Labour Force and Historical Labour Force Statistics, various issues.

Table 2

Growth Rates of Source Population, Labour Force and Employment: British Columbia and Canada 1967-90

	British Columbia			Canada		
Year	Source	LF	Emp	Source Pop	LF	Emp
1967	4.5	6.0	5.3	2.8	3.4	2.9
1968	3.9	4.0	3.1	2.7	2.6	1.9
1969	3.9	5.2	6.2	2.6	3.1	3.1
1970	4.3	4.9	2.2	2.6	2.5	1.1
1971	3.7	3.2	3.6	2.4	2.9	2.3
1972	3.5	4.3	3.7	2.1	3.0	3.0
1973	3.8	5.2	6.4	2.2	4.3	5.0
1974	4.1	5.4	6.1	2.6	3.9	4.2
1975	3.3	4.5	1.9	2.5	3.5	1.7
1976	2.3	2.8	2.6	2.3	2.3	2.1
1977	2.2	2.8	2.8	2.1	2.9	1.8
1978	2.5	4.7	5.0	1.9	3.8	3.5
1979	2.7	3.1	3.8	1.9	3.1	4.1
1980	3.5	5.0	5.9	2.0	3.0	3.0
1981	3.1	4.6	4.7	1.7	2.8	2.7
1982	1.7	0.4	-5.4	1.3	0.2	-3.5
1983	1.1	1.0	-1.0	1.1	1.5	0.5
1984	1.3	1.2	0.1	1.0	1.7	2.4
1985	1.1	1.7	2.4	1.0	1.8	2.6
1986	1.0	2.2	4.1	1.1	1.7	2.8
1987	1.5	2.1	2.8	1.3	2.1	2.9
1988	2.1	2.2	4.1	1.3	2.0	3.2
1989	2.5	4.2	5.7	1.3	1.7	2.0
1990	2.6	1.5	2.4	1.4	1.3	0.7

Notes: Growth rates are percentage changes from the previous year to the year indicated. Source Pop represents population age 15 years and over. LF represents labour force. Emp represents total employment.

Sources: Statistics Canada Labour Force and Historical Labour Force Statistics, various issues.

Table 3

Severity of the 1982/83 Recession and Extent of Subsequent Recovery: British Columbia and Canada

	British Columbia		Canada	
	Real Output	Employment	Real Output	Employment
Severity of the Downturn:				
Trend growth 1971-81 (percent per year)	5.9	4.1	4.8	3.0
Growth 1981-82	-8.6	-5.5	-3.9	-3.5
1981-82 change relative to trend	-14.5	-9.6	-8.7	-6.5
Extent of recovery post 1982:				
Growth 1982-89 (percent per year)	4.0	2.5	4.4	2.3
1982-89 growth rate relative to 1971-81	-1.9	-1.6	-0.4	-0.7

Notes: Real output is final domestic demand at 1981 prices. Source is Statistics Canada Provincial Economic Accounts: Annual Estimates 1984-86, March 1990 and Provincial Economic Accounts: Preliminary Estimates 1989, June 1990. All growth rates are measured as differences in logarithms.

Table 4

Incidence and Duration of Unemployment in B.C. and Canada.

	British Columbia			Canada		
Year	Unem Rate	Incidence (percent)	Average Duration (weeks)	Unem Rate	Incidence (percent) (weeks)	Average Duration
1975	8.5	40.9	10.8	6.9	31.2	11.5
1976	8.6	33.6	13.3	7.1	26.6	13.9
1977	8.5	32.7	13.5	8.1	29.0	14.5
1978	8.3	30.8	14.0	8.3	28.2	15.5
1979	7.7	28.0	14.3	7.4	26.4	14.8
1980	6.8	27.2	13.0	7.5	26.5	14.7
1981	6.7	31.1	11.2	7.5	25.7	15.2
1982	12.1	40.1	15.7	11.0	33.3	17.2
1983	13.8	32.5	22.1	11.8	28.3	21.9
1984	14.7	32.3	23.7	11.2	27.2	21.6
1985	14.1	29.0	25.3	10.5	25.3	21.6
1986	12.5	28.8	22.6	9.5	24.6	20.3
1987	11.9	27.3	22.7	8.8	22.6	20.5
1988	10.3	27.5	19.7	7.8	22.2	18.3
1989	9.1	26.0	18.2	7.5	21.8	17.9
1990	8.3	26.8	16.1	8.1	24.9	16.9

Notes: Average duration is the average duration of unemployment spells in progress at the survey date. Incidence is calculated from the approximation Unem Rate = Incidence * Duration (in months).

Source: Statistics Canada The Labour Force, various issues.

Table 5

Incidence and Duration of Completed Spells of Unemployment, B.C. and Canada 1977-89.

	British Columbia			Canada		
Year	Unem. Rate	Incidence (percent)	Average Duration (weeks)	Unem. Rate	Incidence (percent)	Average Duration (weeks)
1977	8.5	46.7	9.7	8.1	40.4	10.4
1978	8.3	44.0	9.8	8.3	41.8	10.4
1979	7.7	42.0	9.5	7.4	39.4	9.9
1980	6.8	39.5	9.0	7.5	38.9	10.0
1981	6.7	38.8	9.0	7.5	38.6	10.1
1982	12.1	53.7	11.7	11.0	47.3	12.1
1983	13.8	53.3	13.4	11.8	48.8	12.7
1984	14.7	54.7	14.0	11.2	46.8	12.4
1985	14.1	54.4	13.5	10.5	47.2	11.6
1986	12.5	48.4	13.4	9.5	42.2	11.7
1987	11.9	47.0	13.2	8.8	39.7	11.5
1988	10.4	42.2	12.7	7.8	36.6	11.1
1989	9.1	39.5	12.0	7.5	35.3	11.0

Notes: Average duration of completed spells of unemployment were estimated by the authors using unpublished Gross Flows data obtained from Statistics Canada. These data may be subject to large measurement errors and should be treated with caution.
Incidence is calculated from Unem Rate = Incidence * Average Duration (in months).

Figure 1 Non-Employment Rate

British Columbia and Canada 1966-90

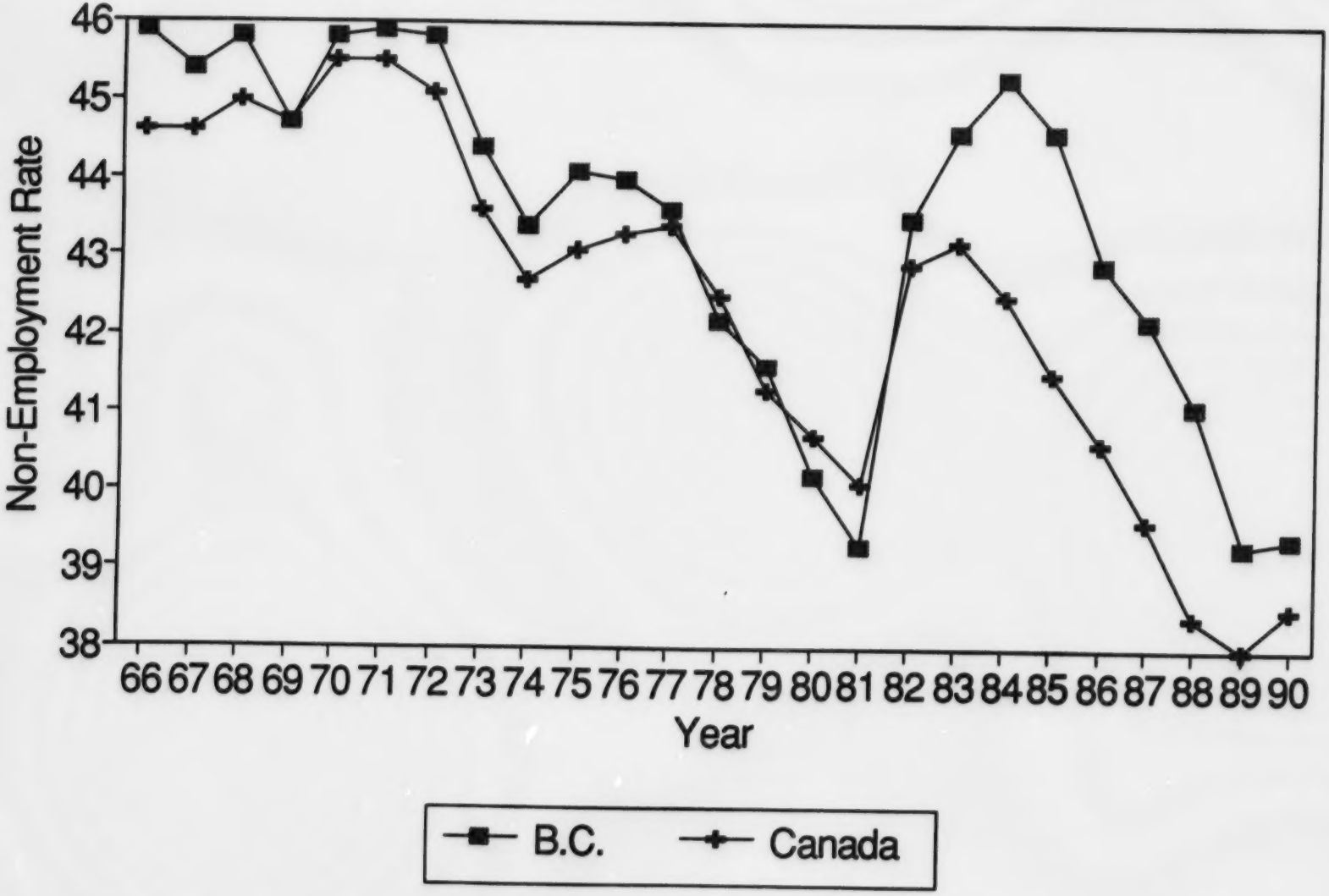


Figure 2 Unemployment Rate

British Columbia vs. Canada 1966-90

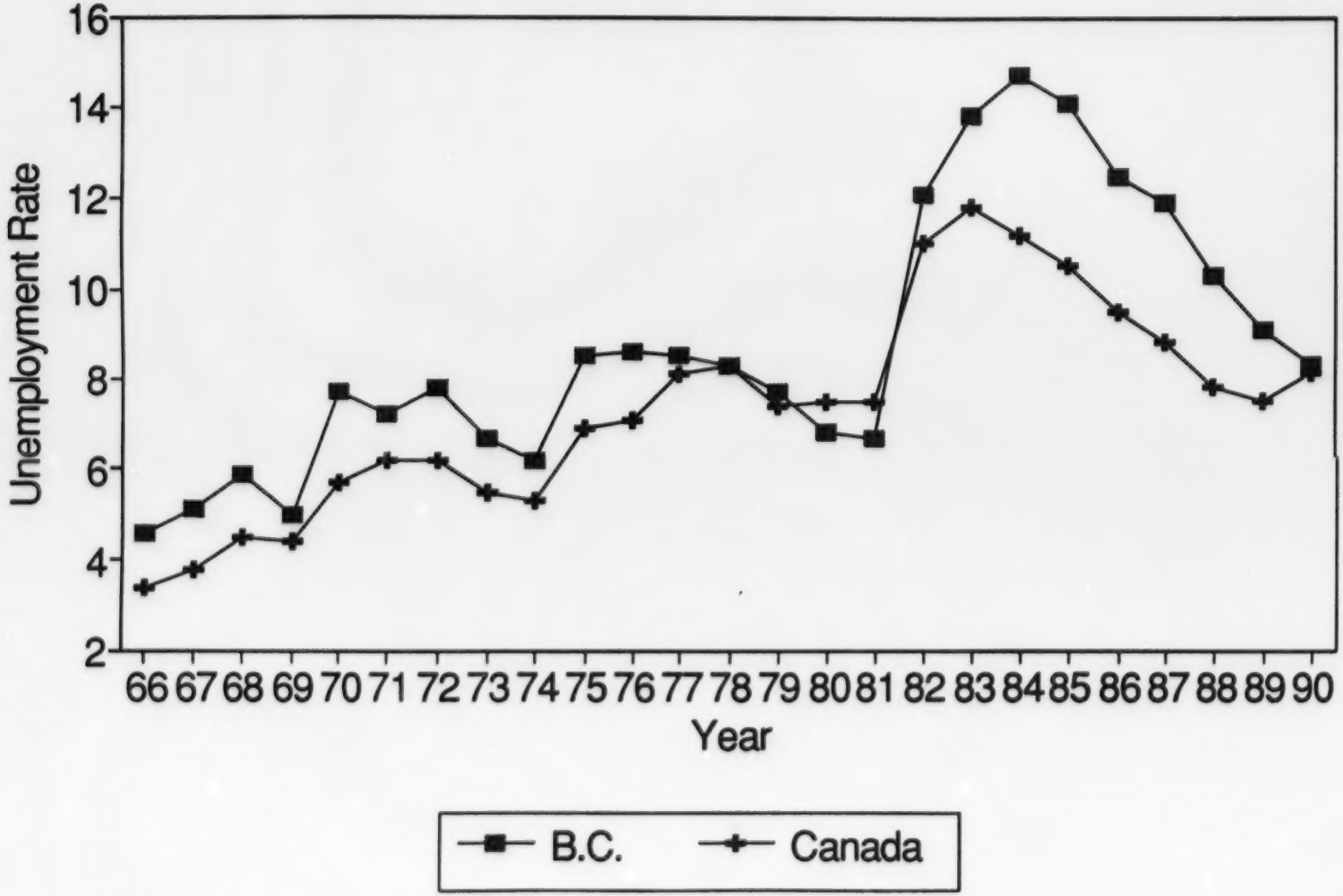


Fig.3 Unem and Nonemp Gaps

B.C. - Canada 1966-90

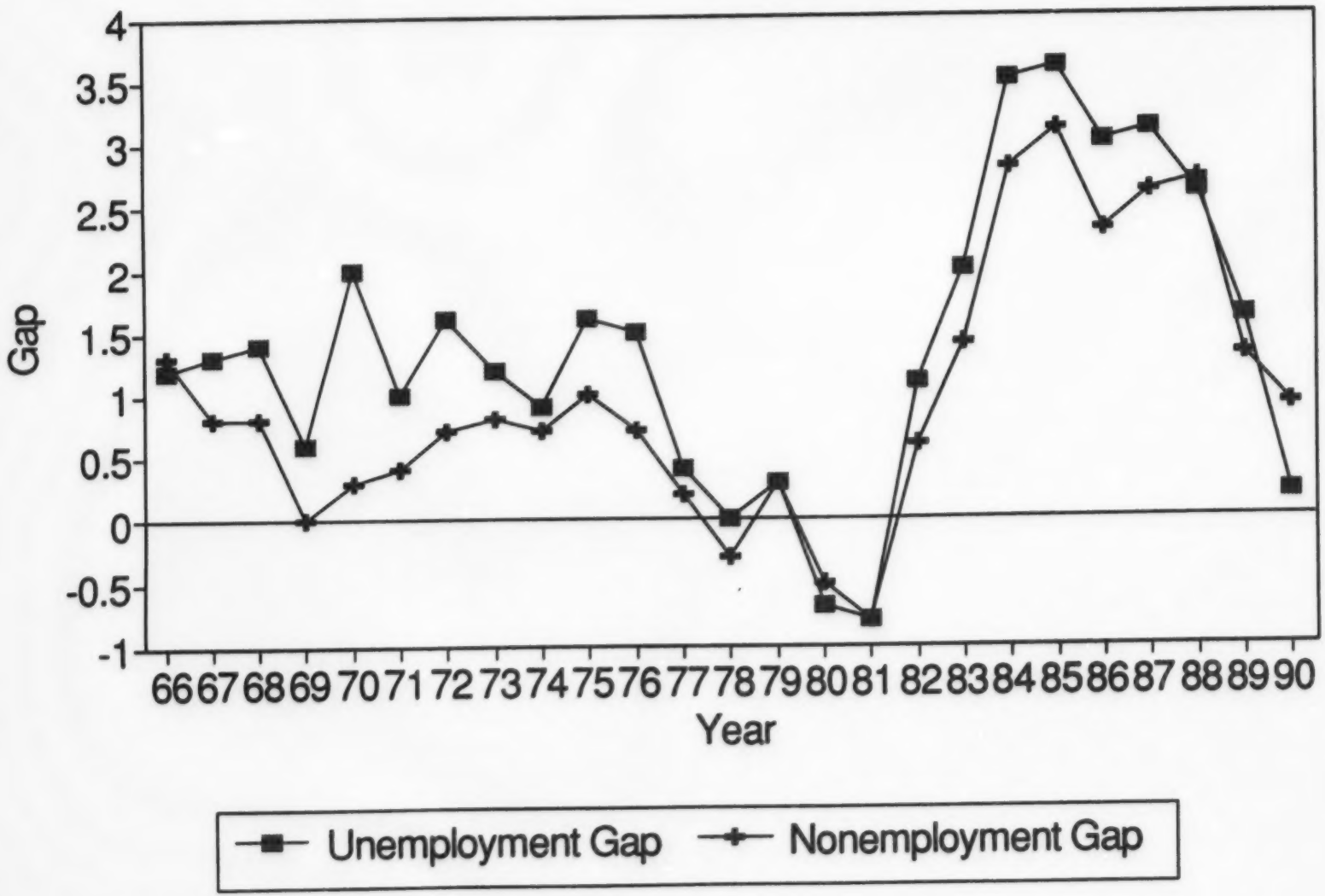


Figure 4 Real Output Growth

British Columbia and Canada 1971-89

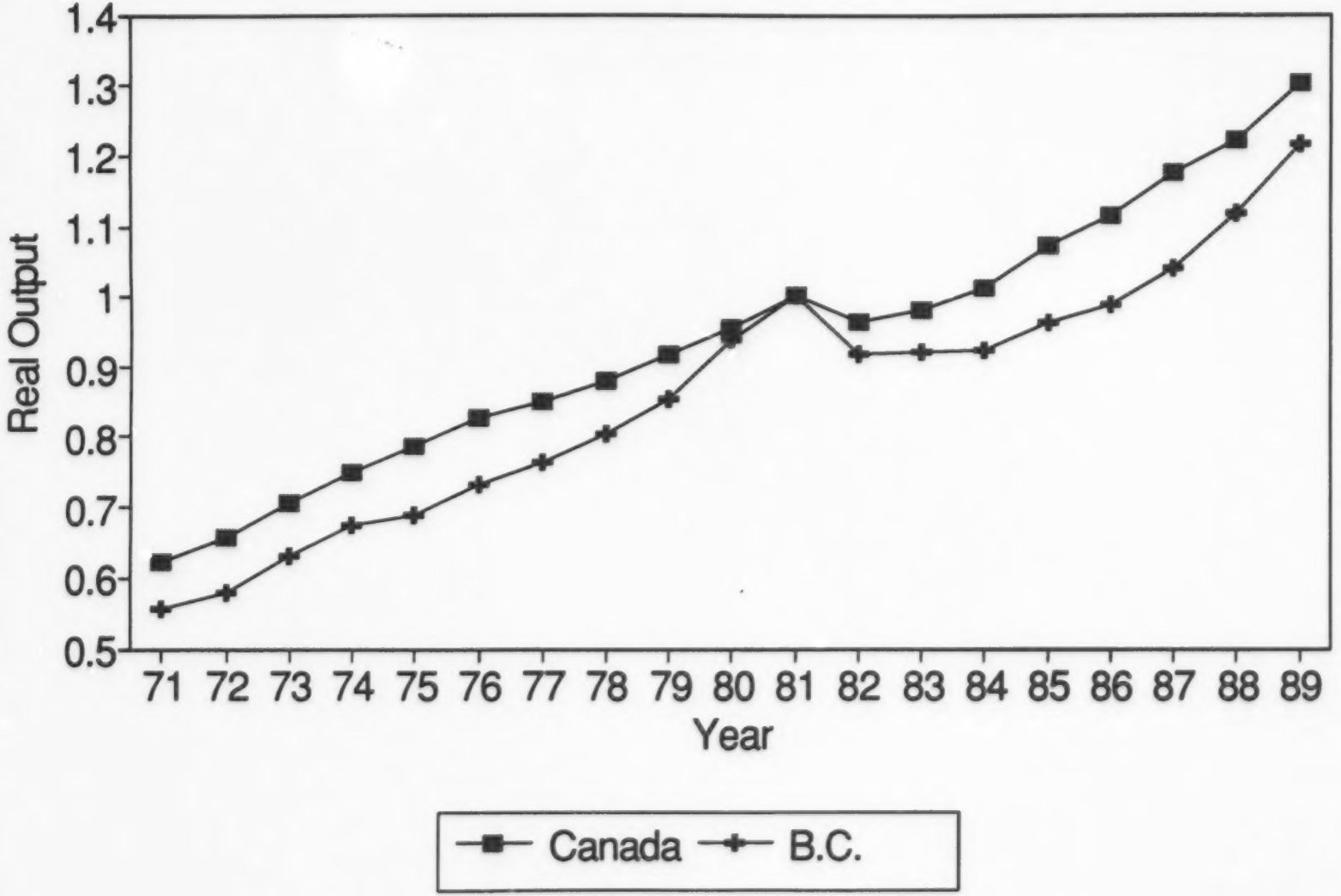


Figure 5

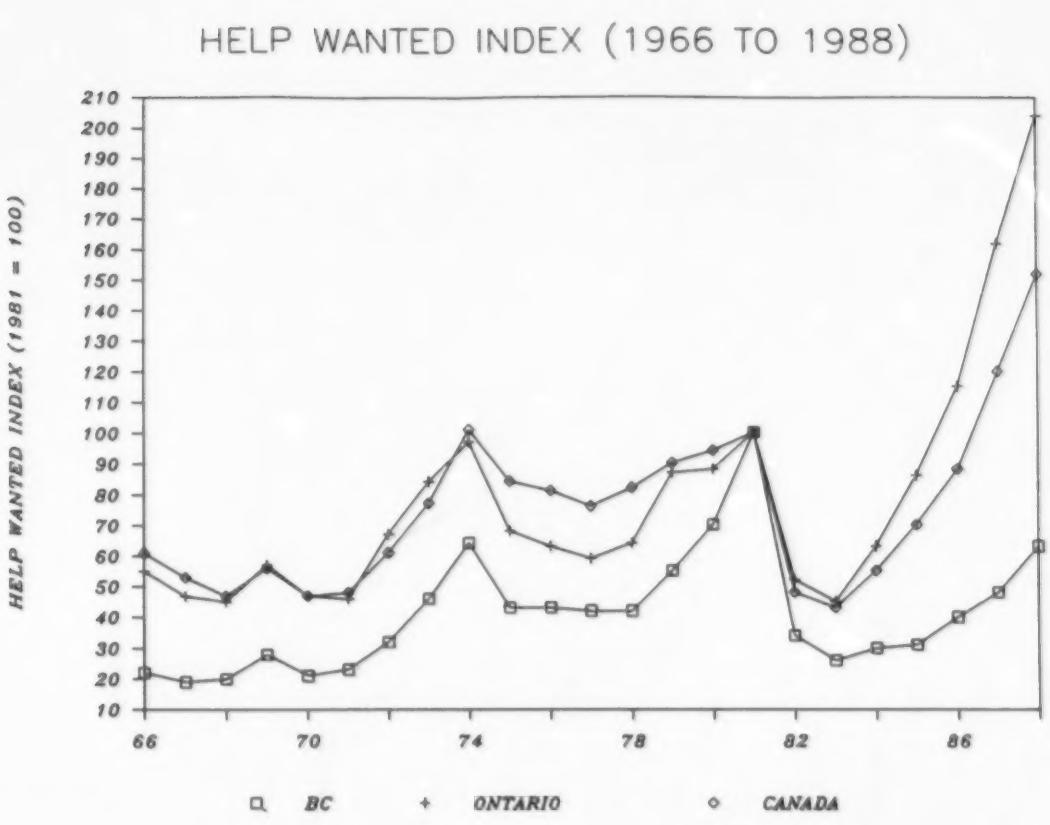

HELP WANTED INDEX (1966 TO 1988)
HELP WANTED INDEX (1981 = 100)
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
66
70
74
78
82
86
BC
ONTARIO
CANADA

Figure 6

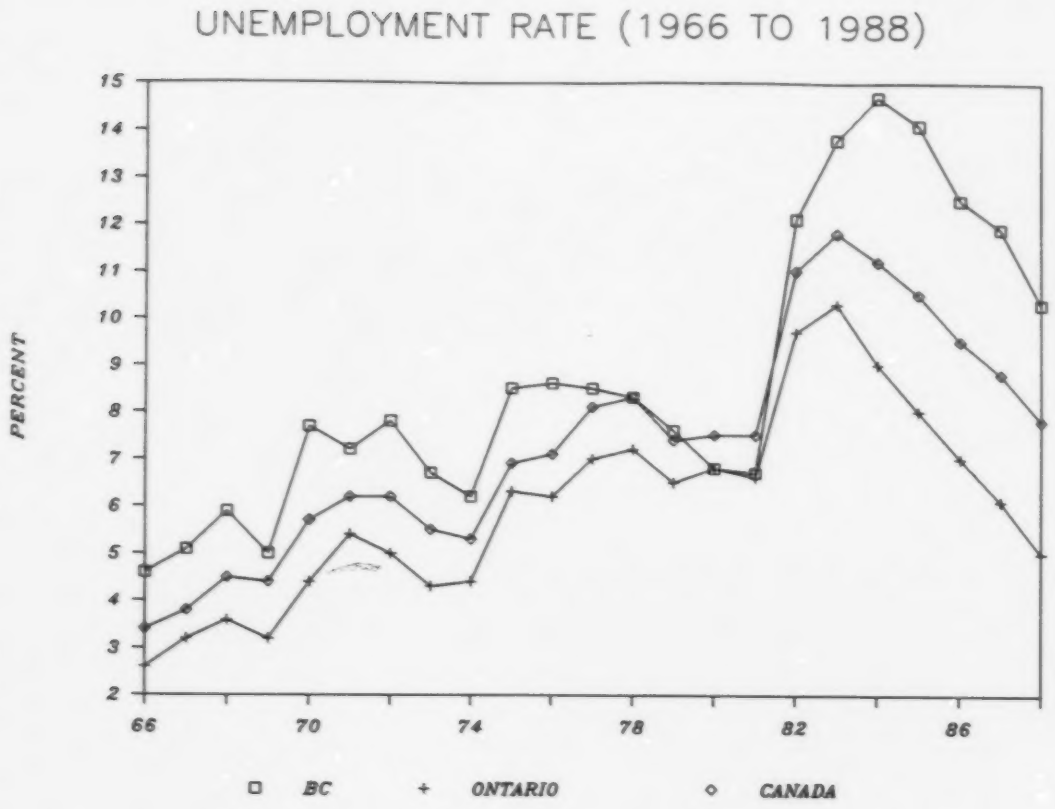

UNEMPLOYMENT RATE (1966 TO 1988)
PERCENT
15
14
13
12
11
10
9
8
7
6
5
4
3
2
66
70
74
78
82
86
BC
ONTARIO
CANADA

Figure 7

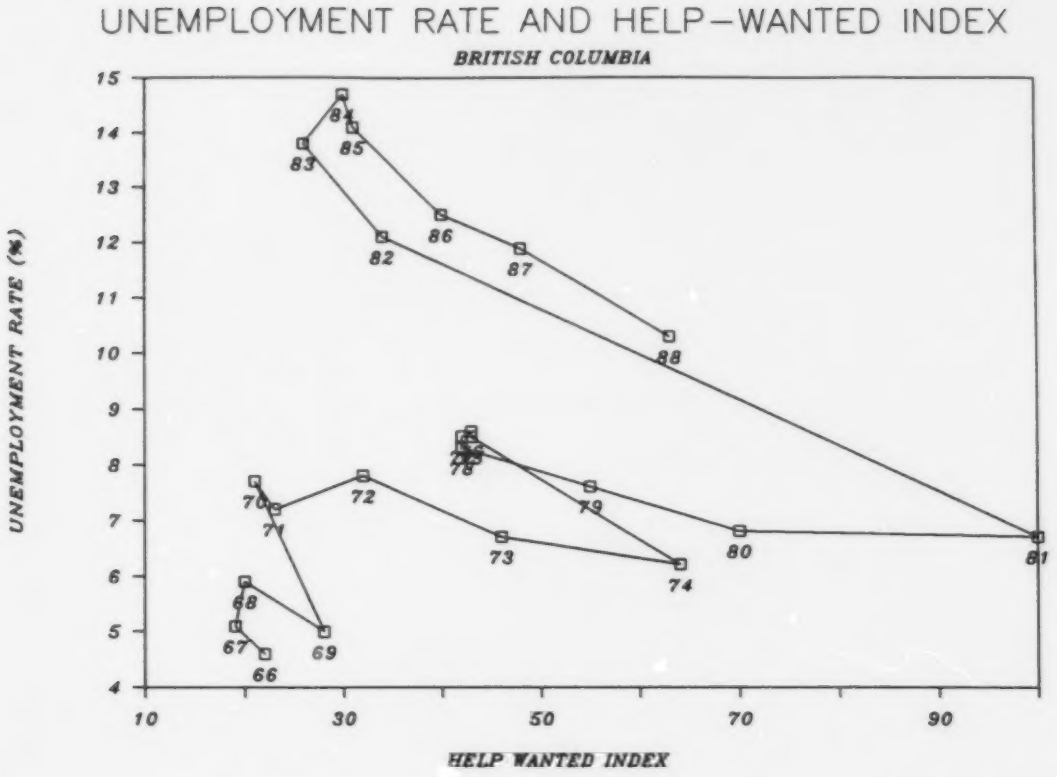

UNEMPLOYMENT RATE AND HELP-WANTED INDEX
BRITISH COLUMBIA
UNEMPLOYMENT RATE (%)
HELP WANTED INDEX
15
14
13
12
11
10
9
8
7
6
5
4
10
30
50
70
90
84
85
83
86
87
82
88
70
71
72
73
79
80
81
74
68
67
66
69

Figure 8

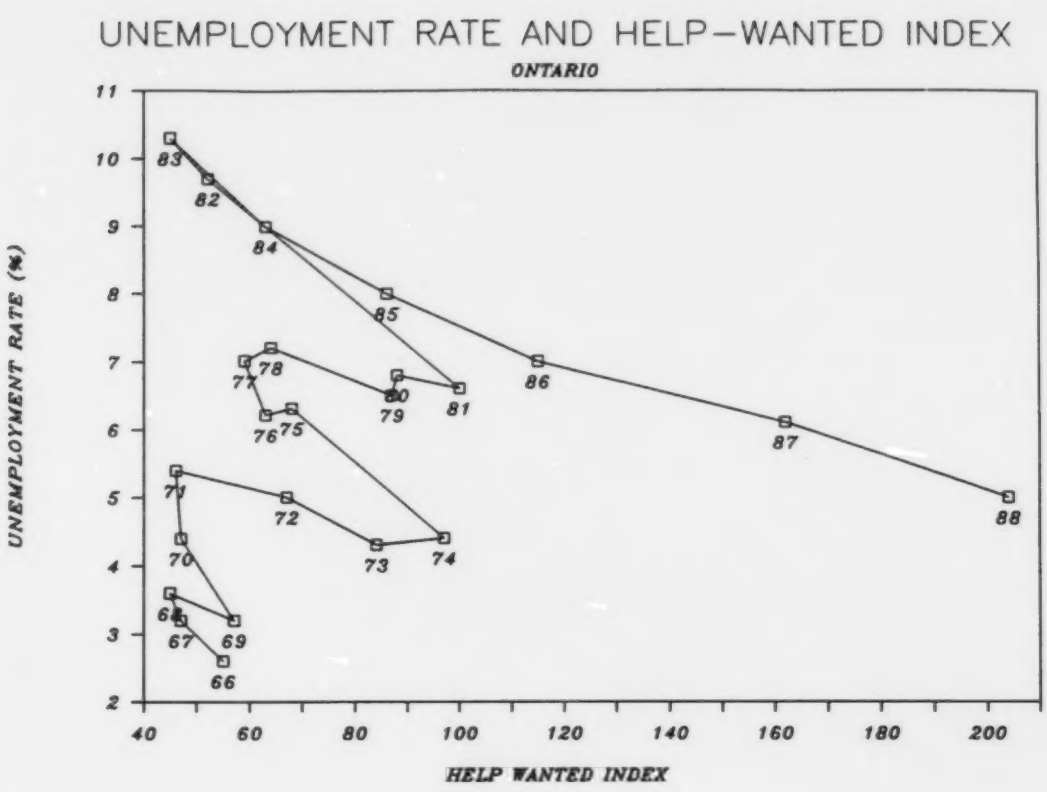
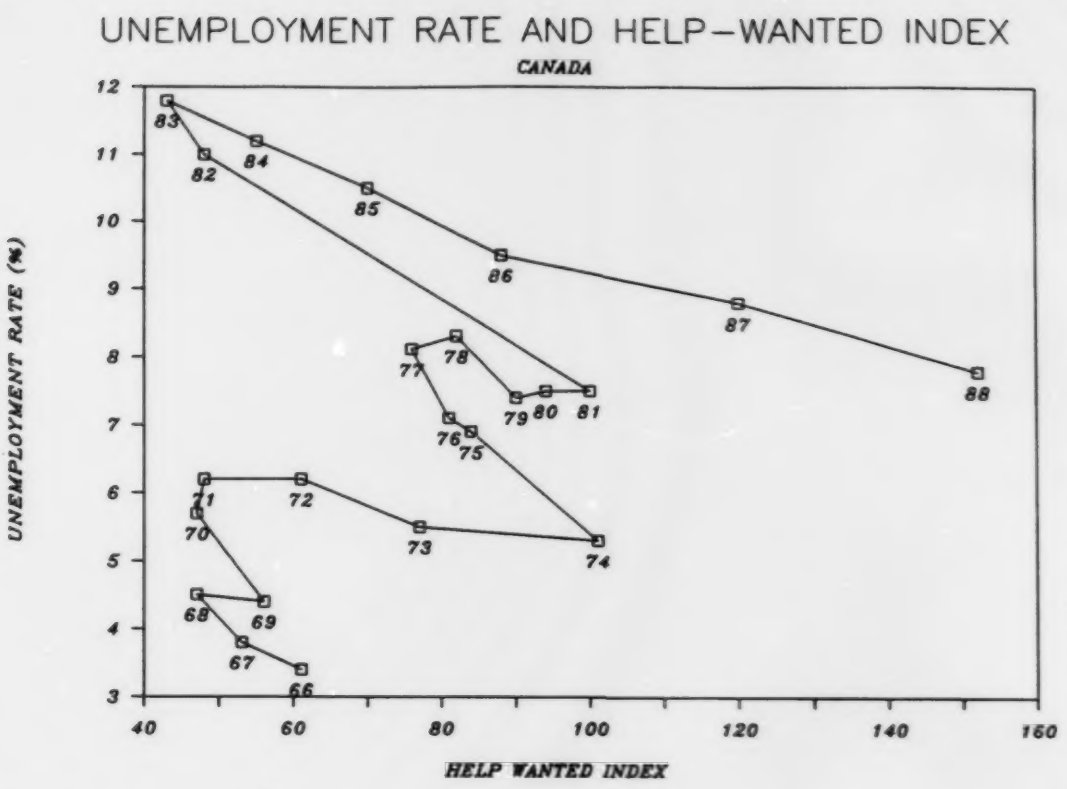

UNEMPLOYMENT RATE AND HELP-WANTED INDEX
ONTARIO
UNEMPLOYMENT RATE (%)
HELP WANTED INDEX
11
10
9
8
7
6
5
4
3
2
40
60
80
100
120
140
160
180
200
83
82
84
85
86
87
88
77
78
80
79
81
76
75
71
72
73
74
70
68
67
69
66

Figure 9


UNEMPLOYMENT RATE AND HELP-WANTED INDEX
CANADA
UNEMPLOYMENT RATE (%)
HELP WANTED INDEX
12
11
10
9
8
7
6
5
4
3
40
60
80
100
120
140
160
83
82
84
85
86
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77
78
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80
81
76
75
71
72
70
73
74
68
69
67
66

Figure 10

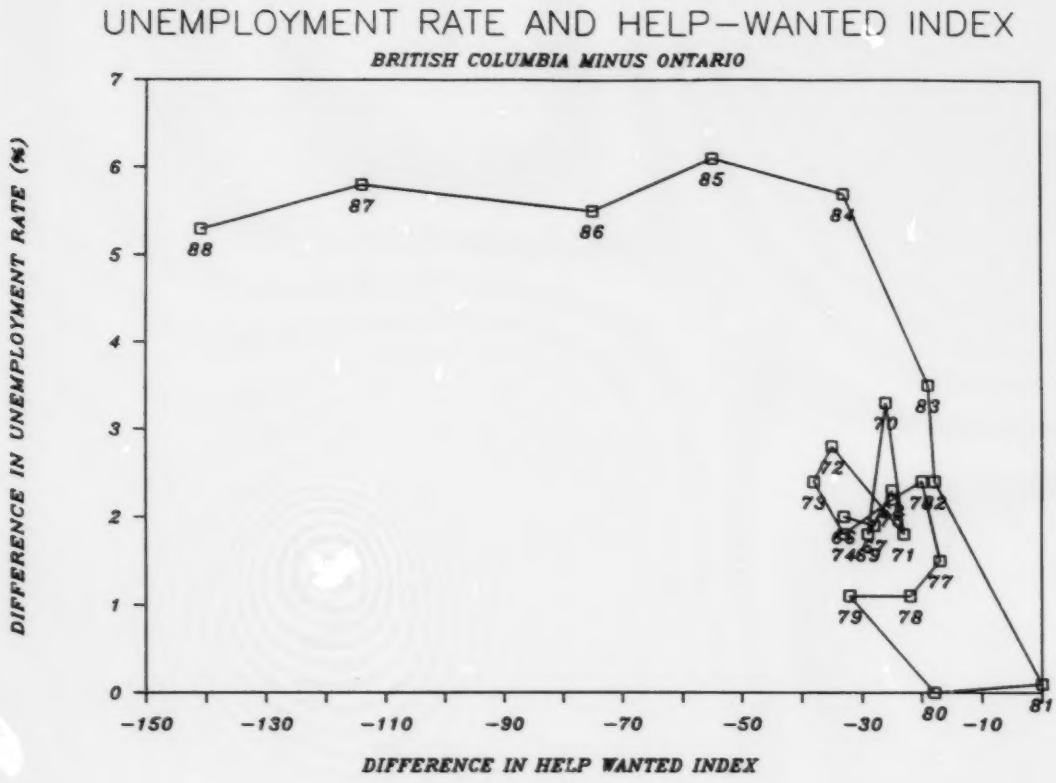

UNEMPLOYMENT RATE AND HELP-WANTED INDEX
BRITISH COLUMBIA MINUS ONTARIO
DIFFERENCE IN UNEMPLOYMENT RATE (%)
DIFFERENCE IN HELP WANTED INDEX
7
6
5
4
3
2
1
0
-150
-130
-110
-90
-70
-50
-30
-10
88
87
86
85
84
83
82
81
80
79
78
77
71
70
73
72

Figure 11

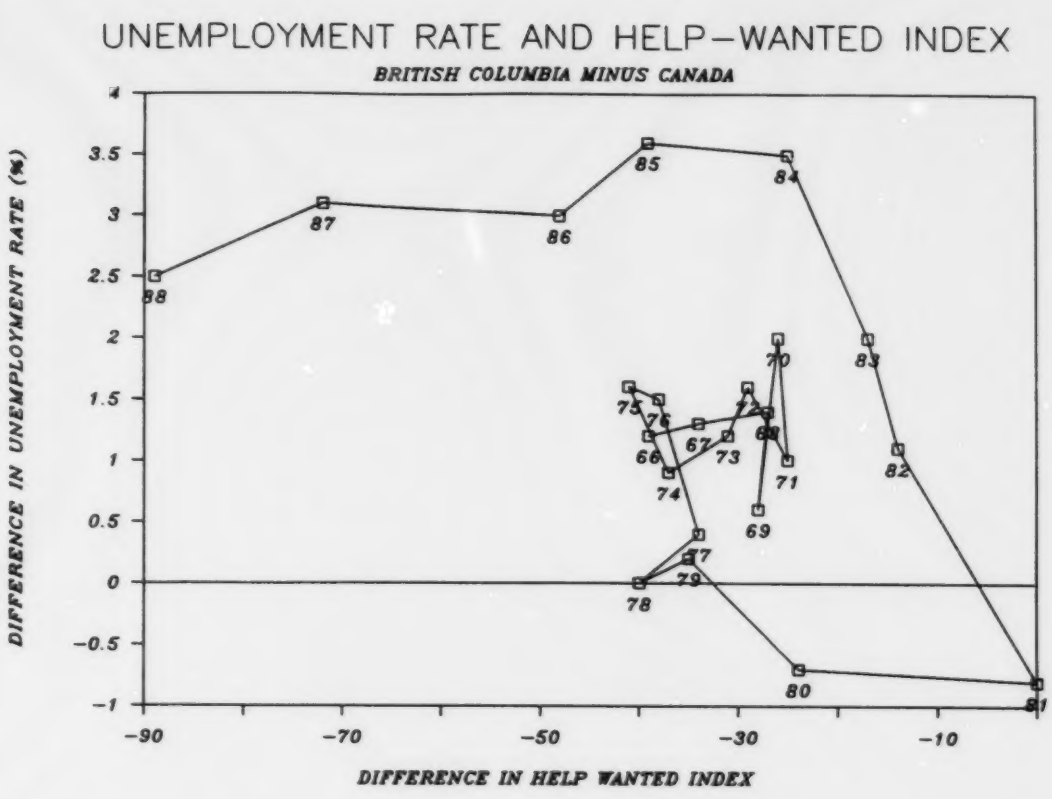

UNEMPLOYMENT RATE AND HELP-WANTED INDEX
BRITISH COLUMBIA MINUS CANADA
DIFFERENCE IN UNEMPLOYMENT RATE (%)
DIFFERENCE IN HELP WANTED INDEX
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-90
-70
-50
-30
-10
88
87
86
85
84
83
82
81
80
79
78
77
76
75
74
73
72
71
70
69
67
66

Figure 12 HWI vs. Unem Rate

British Columbia 1981-89

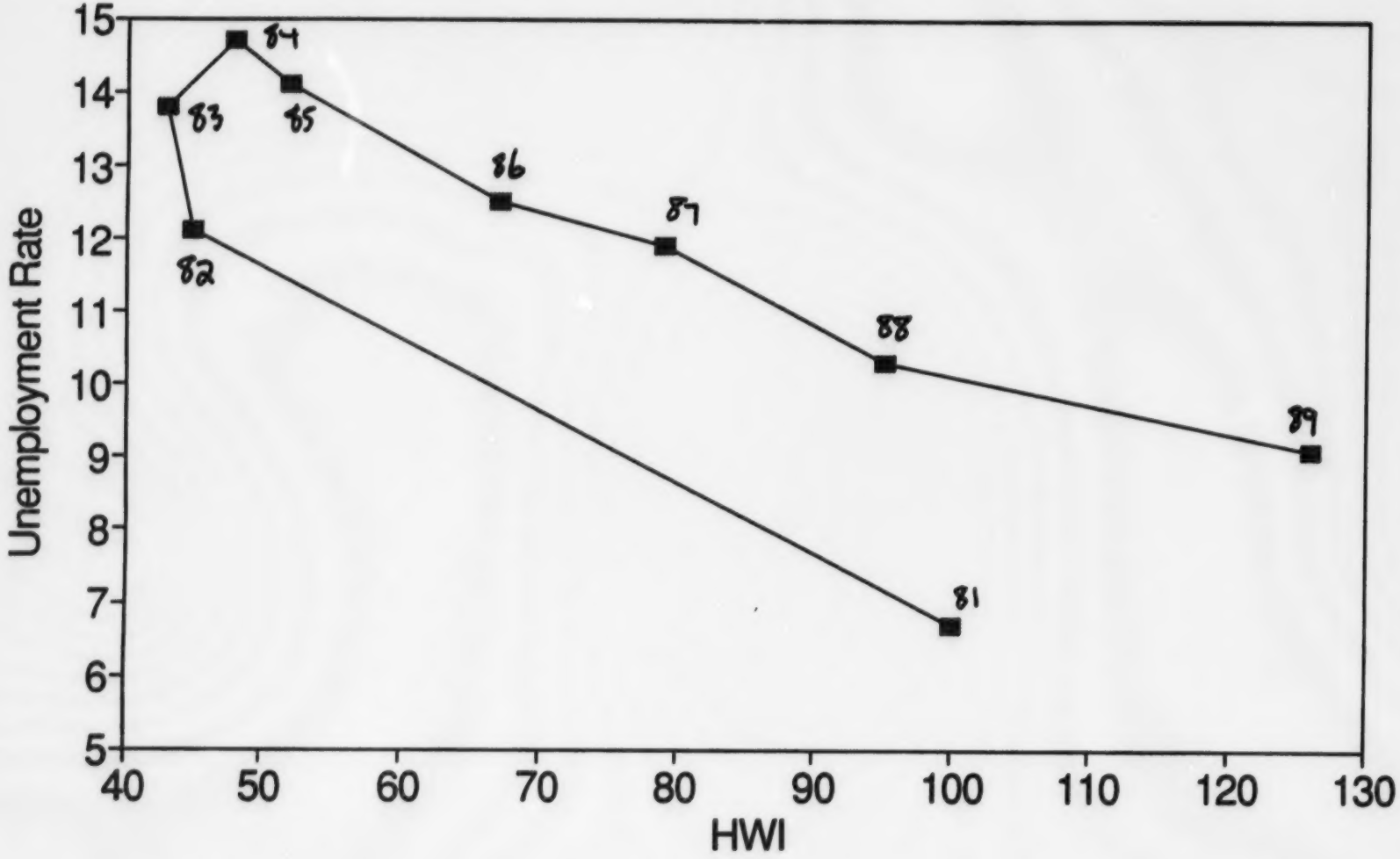


Figure 13 HWI vs.Metro Unem Rate
British Columbia 1981-89

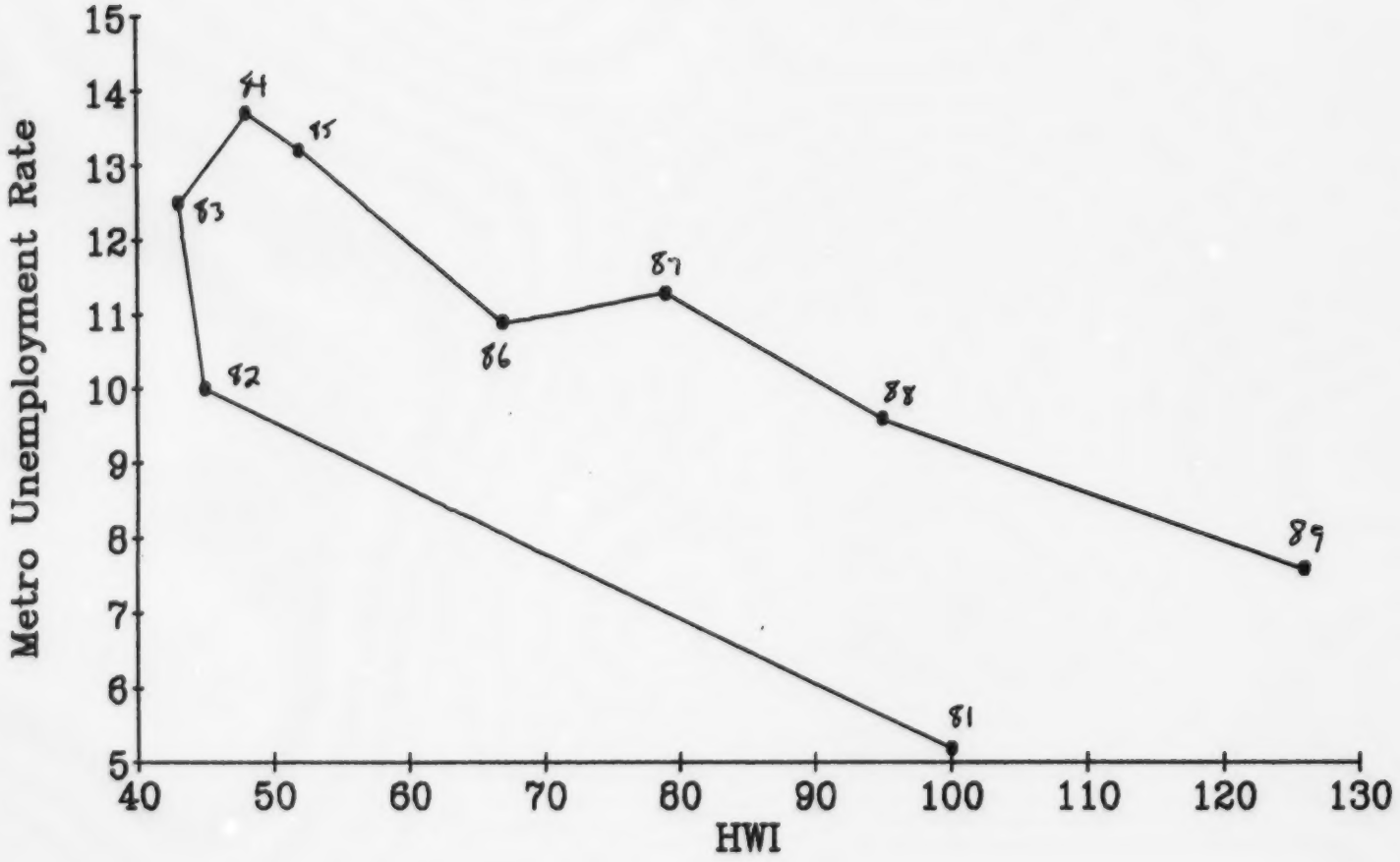


Fig.14 Incidence and Duration of Unem
British Columbia 1975–90

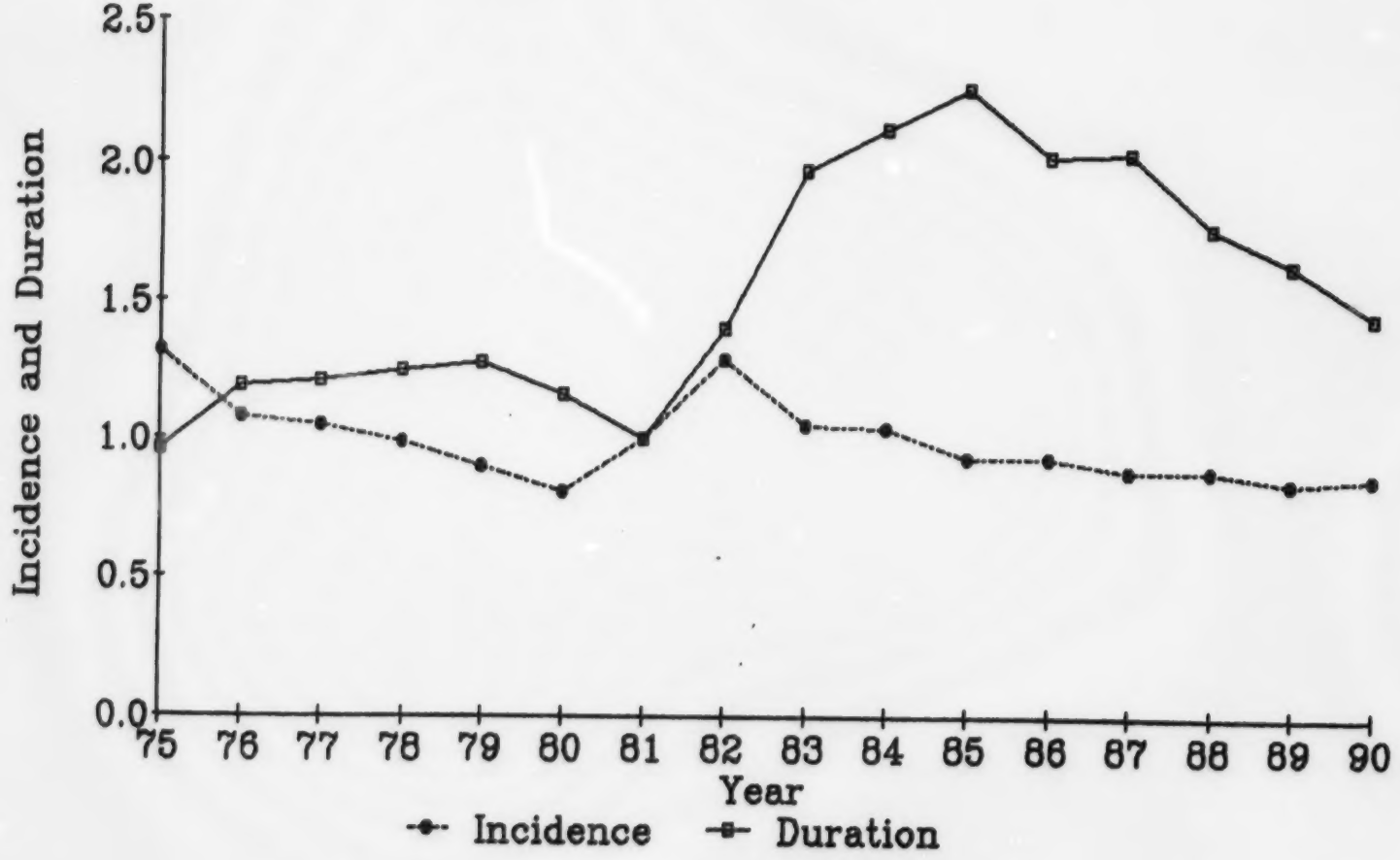


Fig.15 Incidence and Duration of Unem

Canada 1975-90

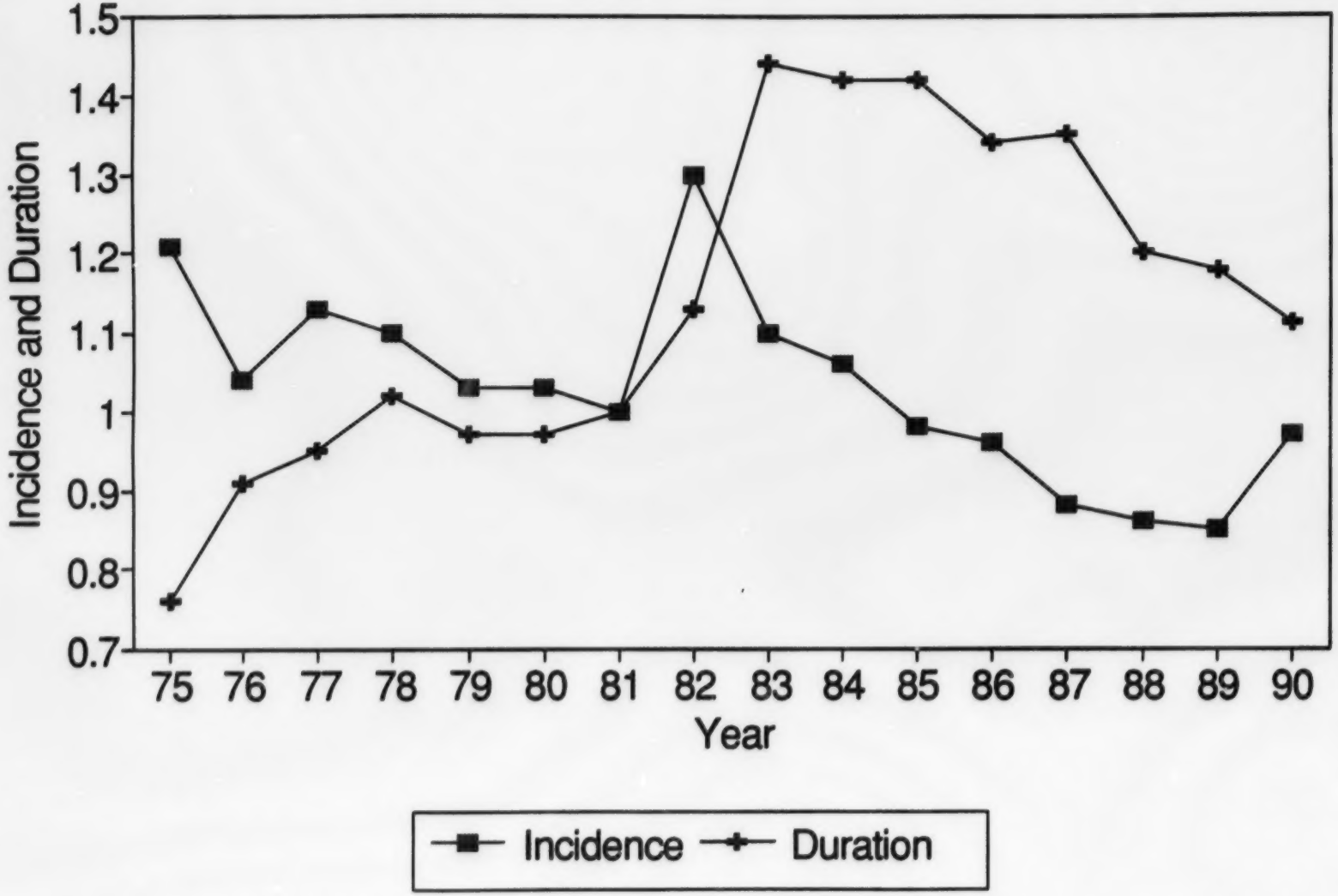


Fig.16 Incidence and Duration of Unem

Completed Spells: B.C 1977-89

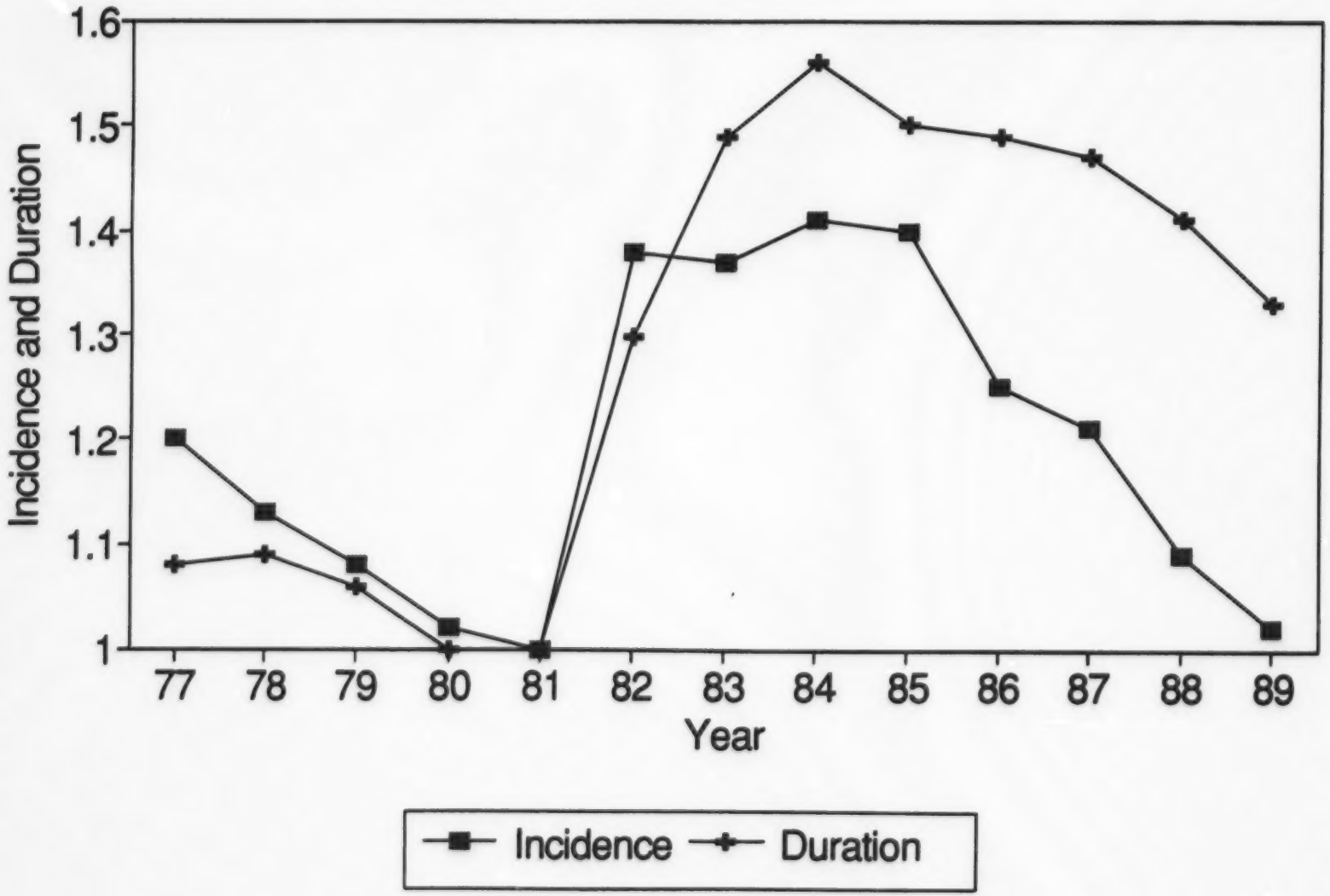


Fig.17 Incidence and Duration of Unem
Completed Spells: Canada 1977–89

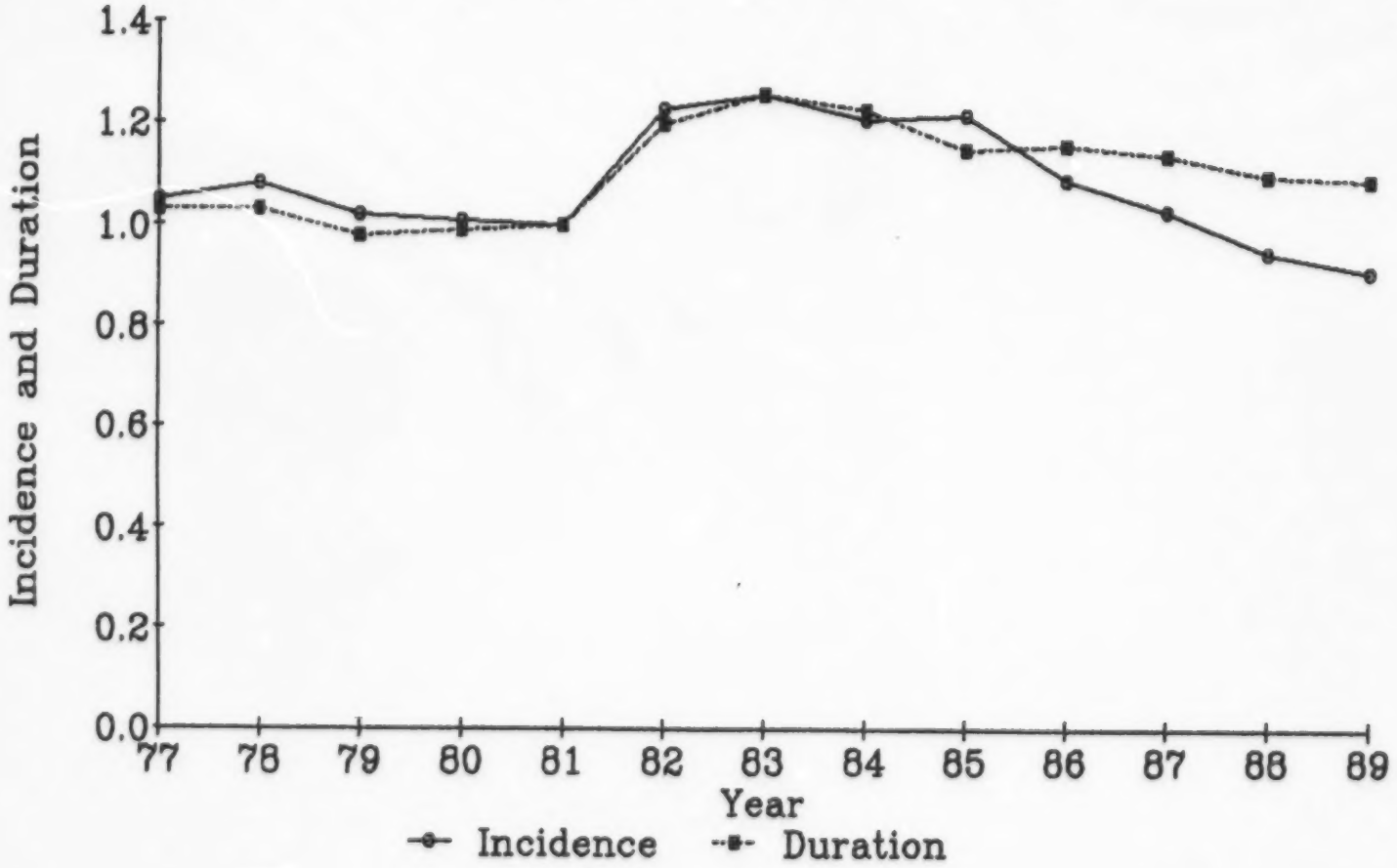


Figure 18

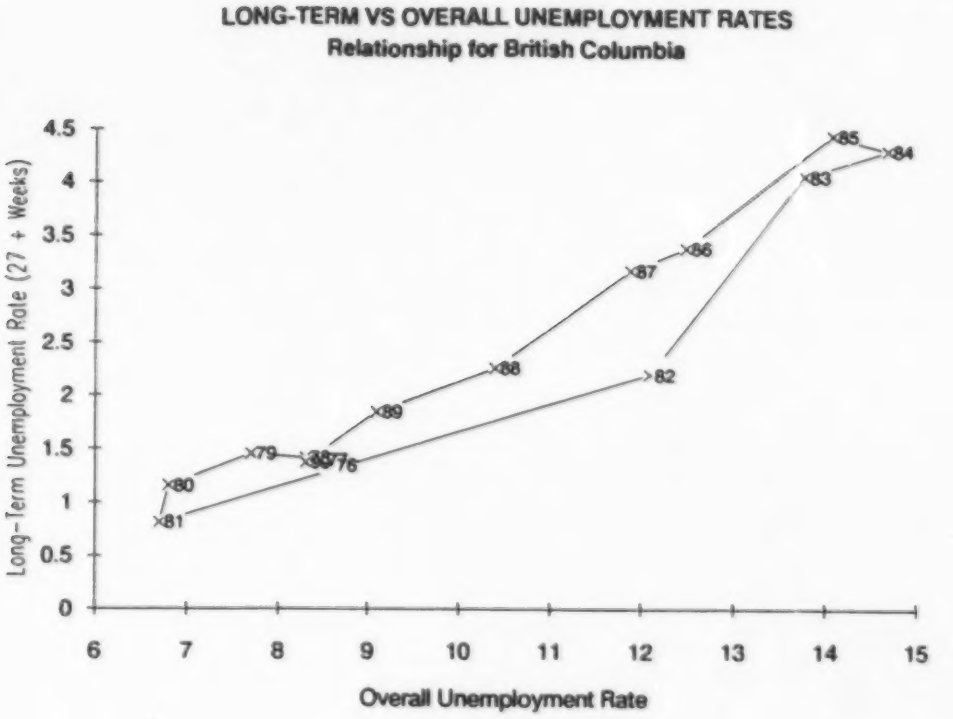
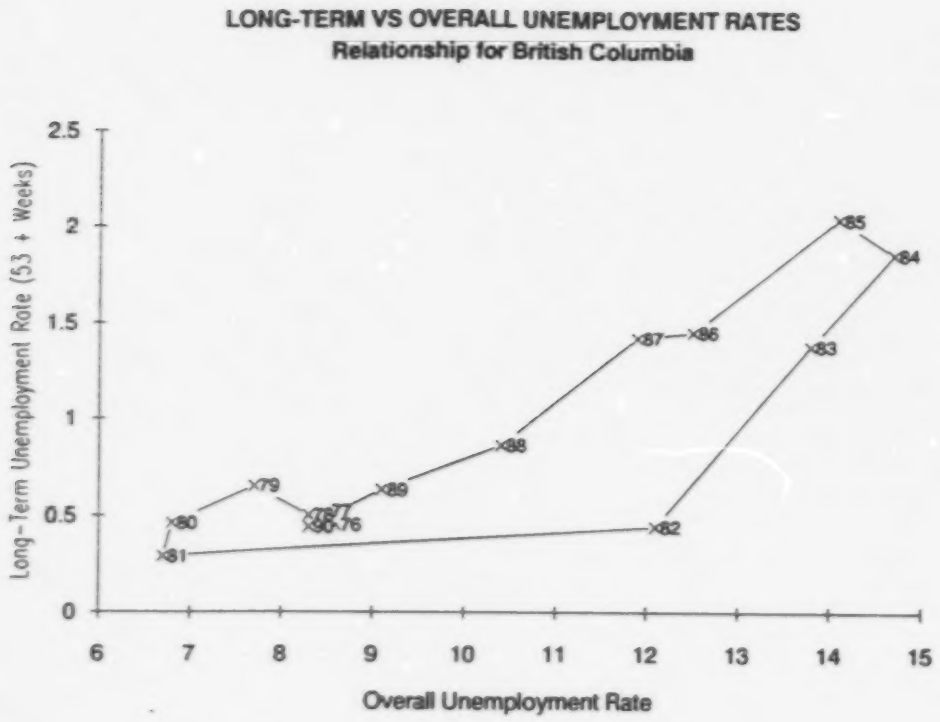

LONG-TERM VS OVERALL UNEMPLOYMENT RATES
Relationship for British Columbia
Long-Term Unemployment Rate (27 + Weeks)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
6
7
8
9
10
11
12
13
14
15
Overall Unemployment Rate
85
84
83
86
87
88
89
82
79
80
81
76

Figure 19


LONG-TERM VS OVERALL UNEMPLOYMENT RATES
Relationship for British Columbia
Long-Term Unemployment Rate (53 + Weeks)
2.5
2
1.5
1
0.5
0
6
7
8
9
10
11
12
13
14
15
Overall Unemployment Rate
80
79
78
77
90
76
89
88
87
86
85
84
83
82
81